

540,193

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number
WO 2004/057020 A1

(51) International Patent Classification⁷: **C12Q 1/68,**
G01N 33/50

(21) International Application Number:
PCT/BR2003/000202

(22) International Filing Date:
22 December 2003 (22.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PI 0206903-2 20 December 2002 (20.12.2002) BR

(71) Applicants (for all designated States except US): **UNIVERSIDADE FEDERAL DE SÃO PAULO - UNIFESP** [BR/BR]; RUA BOTUCATU, 740 VILA CLEMENTINO, 05508-900 SÃO PAULO (BR). **FUNDAÇÃO DE AMPARO À PESQUISA DO ESTADO DE SÃO PAULO - FAPESP** [BR/BR]; R. Pio XI, 1500, Alto de Lapa, 05468-150 São Paulo (BR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CASARINI, Dulce, Elena** [BR/BR]; RUA BOTUCATU, 740, 04023-900 SÃO PAULO (BR). **MARSON, Odair** [BR/BR]; RUA BOTUCATU, 740, 04023-900 SÃO PAULO (BR).

PLAVNIK, Frida, Liane [BR/BR]; RUA BOTUCATU, 740, 04023-900 SÃO PAULO (BR). **KRIEGER, José, Eduardo** [BR/BR]; AV. DR. ENÉAS CARVALHO AGUIAR, 44, 05003-000 SÃO PAULO (BR).

(74) Agent: **DI BLASI, Gabriel**; Di Blasi, Parente, Soerensen Garcia & Associados S/C, Rua do Ouvidor, 121/12º andar, Centro, 20040-030 Rio de Janeiro (BR).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

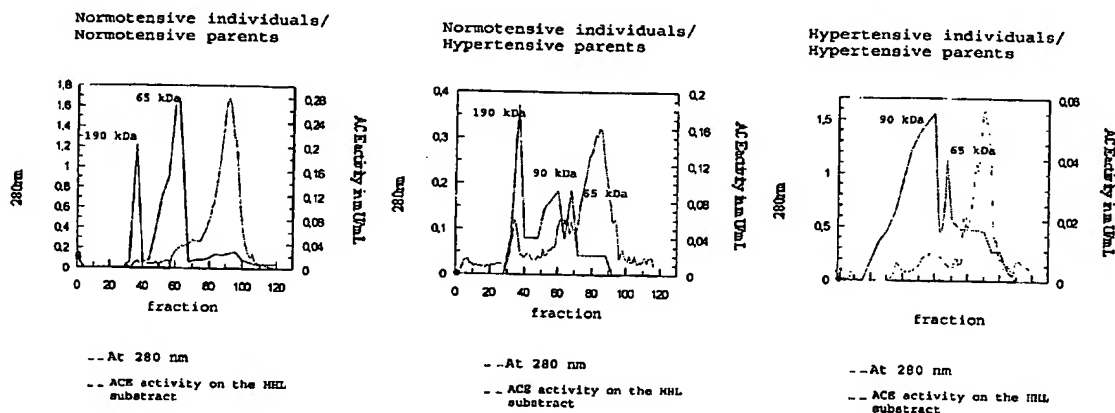
(84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: METHOD OF IDENTIFICATION AND QUANTIFICATION OF PROTEINS, ISOFORMS OF THE ANGIOTENSIN I CONVERTING ENZYME, MOLECULAR GENETIC MARKER BASED ON SAID PROTEINS, USE OF MENTIONED MARKER, ANALYTICAL METHOD FOR DIAGNOSIS, RISK STRATIFICATION, THERAPEUTICAL DECISION IN CARRIERS OF ARTERIAL HYPERTENSION AND RENAL LESION AND KIT FOR US



(57) Abstract: The present invention relates to a method of identification and quantification of proteins, isoforms of angiotensin I converting enzyme (ACE), 190-kDa, specially of 90 kDa in tissues, cells and biological fluids, specially in urine, genetic marker and prognostic agent of hypertension on basis of said proteins, use of mentioned molecular marker and agent in carriers of arterial hypertension and primary or secondary renal lesion and kit for using in the diagnosis, risk stratification and therapeutical decision in arterial hypertension. One of the aims of the present invention is to check the potential of the 90 kDa isoform as a hypertension genetic marker isoform and as a prognostic for hypertension.

WO 2004/057020 A1

WO 2004/057020 A1



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/BR 03/00202-0

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: C12Q 1/68, G01N 33/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: C12Q 1/68, G01N 33/50

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, CAS, Medline

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	HATTORI, M.A. et al. Angiotensin I-Converting Enzyme Isoforms (High and Low Molecular Weight) in Urine of Premature and Full-Term Infants. Hypertension, 2000, Vol. 35, No. 6, pages 1284-1290 <i>the whole document.</i>	1-22

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

17 February 2004 (17.02.2004)

Date of mailing of the international search report

11 March 2004 (11.03.2004)

Name and mailing address of the ISA/AT

Austrian Patent Office

Dresdner Straße 87, A-1200 Vienna

Facsimile No. 1/53424/535

Authorized officer

MOSSER R.

Telephone No. 1/53424/437

INTERNATIONAL SEARCH REPORT

International application No.
PCT/BR 03/00202-0

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 17,18
because they relate to subject matter not required to be searched by this Authority, namely:
Remark: Although claims 17 and 18 relate to a method of diagnosis practised on the human body (see PCT Rule 39.1(iv)) the search was carried out and based on the alleged effects.
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/BR 03/00202-0

Patent document cited
in search report

Publication
date

Patent family
member(s)

Publication
date